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BADGERS AND OTTERS.

Hazelhurst was a long line of woodland, on one side skirted by the sea, and on the other by a crumbling limestone escarpment. It was woodland with the deep impress of time upon it—a forest primeval. The branches and boles of the oaks were tortured out of all original conception. Save for colour, they might have been congealed water or duramen muscles. Down in the hollows there are deep moss, elastic and silent over all.

For centuries the pines had shed their needles undisturbed. These and the pine-trunks sent up a sweet savour from the earth, an odour that acted as a tonic to the whole being. There were sun-flashes in the grassy glades, where the jays chattered and the cushats cooed, and where ever and anon a rabbit rustled through. Often over these the kestrel hung and vibrated its shadow on the spot beneath; or the sparrow-hawk, with its clean-cut figure, stood with its foot on its prey on a dead pine bough. In the summer, red creatures that were bits of light gracefully glided among green tassels, and the chatter of squirrels was heard. The older trees attracted woodpeckers, and the nuthatch threw out fine fibres of rotten wood. Sometimes a pheasant or a partridge would startle, getting heavily up from its olive eggs by a log left by the charcoal-burners. Thus rudely disturbed, it has no time to scatter leaves over its nest, as is its wont. The shaggy and corrugated bark of the old trees was larvæ-haunted, and consequently mouse-like creepers abounded. These little creatures on every trunk showed conspicuously as they ran their marvellous adaptation to an end, and fulfilled it perfectly. All the wood-birds were there—the white-throat, the wood and the willow wren, the chiff-chaff and garden-warbler. These sang from the leafy boughs. But higher up towards the escarpment the floor of the wood was rugged and rock-strewn. Boulders had rolled from above, and among these dwelt weasels and ermines. There were at least a pair of martens, and foxes from the fells had their tracks through the woods.

A primitive mansion had once stood in the wood, but now it was gone. It had been large; and green mounds, now laid low, marked out its dimensions. Old oak panellings, with long-gone dates, were sometimes dug up, and these were covered with carvings quaint and curious—'all made out of the carver's brain.' Lying round this had been an extensive orchard, the rich though old trees of which remained. And now in this glorious summer-time the golden fruit fell unheeded to the ground. For Hazelhurst was long distant from town or nearest village. Brambles held their luscious fruit, and every species of ground-berry grew here. No wonder it was a paradise to mice and squirrels and birds. They revelled in nature's ample provision, and were undisturbed.

Here, in the days of our immediate ancestors, badgers were plentiful. Now, where a ridge of rock ran through the wood there was a hole, the entrance to a somewhat spacious cavity. This could be seen for the seeking, not otherwise. Brambles protected it and ground-ivy. Black bryony and woodbine twisted up every available stem, and a knot of blackthorn grew over all. The spot was protected and dense. One day we invaded it; but after long crawling and sticking fast, had to return. In it lived the badgers—had done so time out of mind, and the few poachers who knew it called it 'Brockholes.' 'Brock' is the old north-country word for badger, and, as we have said, everything testified to its presence. In this wild-fruit paradise, at least two pairs of badgers bred. Each pair had more than one apartment—at least the young were not produced in that which formed the general abode. These were at the ends of the burrow, where were the beds, composed of roots and dried grass. The young were brought forth in April, and after about six weeks, might have been seen sitting about the mouth of their hole, or accompanying their dam to short distances when on her evening rambles. We always found the badgers un-

offending harmless creatures, unless first attacked. They fed almost entirely on roots, wild fruits, grain, and occasionally insects. They were, however, extremely shy and wary. Beautiful it was to see these creatures in summer searching for food among the bushes, occasionally giving a low grunt when some favourite root was turned up. When insects came within their reach they were snapped up somewhat after the manner of a dog catching flies.

The life of the badger is eminently that of a peaceful creature, harmless in all its ways, unoffending, interesting in its life-history, useful, and, above all, filled with a quiet contentment almost human. The body of the badger is long and heavy, and its legs short, which give it an awkward shambling appearance when running. Its beautifully shaped head has two long lines running from the snout to the tips of the ears. The upper parts of its body are light gray, becoming darker below; the under parts are quite black. The total length of a fully grown male badger is about thirty-six inches. Especially is the structure of the badger adapted to its mode of life, this being shown in the slender muzzle with movable snout which is employed in digging. It is when thus occupied, too, that the short stout limbs are seen fulfilling their end; and when no natural cavity exists, it is these limbs and snout that provide one. Both are brought into frequent requisition when digging for roots, of certain of which the badger is particularly fond.

Badgers are quite susceptible of domestication, and a friend had a pair which he led about in collars. They are possessed of great affection for their young, and rush blindly into danger, or even suffer themselves to be killed in attempting to rescue them.

We have stretched our length along a slab of rock which margins the bank and recedes far under it. The stream for the most part is rapid, but here narrows to slow black depth. Ever and ceaselessly does the water chafe and lap among the shelving rocks, and this, with the constant 'drip,' only makes the silence audible. Fungi and golden mosses light up our dark retreat. Never was green more green or lichen tracery more ravishing. Close-clinging and rock-loving is all life here. Water percolates through the bank and spreads its silver filament over all. Far out and beyond the deep wood it comes from the scaurs, and the limestone sends its carbonate to dome our retreat. Miniature stalactites hang from the roof, and bright bosses rise from the floor. Frail fern-fronds depend from the crevices; and as the light rushes in, masses of golden saxifrage gild all the chamber. The beams will not long stay, for the sun dips in the western woods.

From the mouth of our recess we take in a silent river-reach. It is thickly embowered and overhung. Long drooping racemes of green tree-flowers attract innumerable insects, especially those of the lime, and intent upon these, a fly-catcher sits lengthwise upon a branch. How beautiful in its short flights, the iridescence of its plumage, its white eye-lines, and barred forehead! Numerous small waterfalls, the gauze and film veils of which when the wind blows, and dripping moss, have attracted the dippers. Kingfishers too, in their green flight dash over the still stream. The remote pines have lost their light, and stand black against the water. Sundown has come, and it is the hour of vesper hymns. The woods are loud-swelling volumes of sound. Behind us is a woodland enchanted, though with no sadder spirit than blackbirds and thrushes that whistle to cheer it. This loud evening hymn lasts for an hour, and then subsides, and the woods hush. The stem of the silver birch ceases to vibrate to the blackbird's whistle. The polyglot wood-thrush is dreaming of gilded fly and dewy morn, and finally that last far-off song has ceased. Silence—an intense holy calm—is over the woods. Chill comes, the dew rises, and twilight!—and the night-side of nature. How rich and varied is that of the stream-side! The fern-owls, with their soft plumage and noiseless flight, come out, as do the great moths and bustards.

This prevalence of life at the same time is as nature would have it—the one acting as food for the other. The beat of unseen pinions is heard above, but no object visible—some night-haunting bird flying off to its feeding-ground. Through the short summer night snipe whistle and wail. Newly arrived crakes call from the meadows, and a disturbed lapwing gets up crying from the green corn-stalks. Maybe the disturber was the hare, whose nearly human cry now comes from thorn-fence. For it, the corn-sprouts have come for the last time, and soon it will be in the poacher's wallet. A loud splash comes from the water, and a great black trout has sucked down its prey. This is a large-winged night-fly. The first splash is a token of more abundant night-food, and soon the reach boils. The crescent moon shows a bit of light at intervals; soon masses of cloud intervene. A faint whistle, unlike that of any bird, comes up stream, and although imperceptible, the dark still water is moved. The trout cease to rise. The whistle comes nearer, and then a rustle is heard. The osier beds are stirred, and some long dark object makes its way between the parted stems. It is an otter. He has been sent to reconnoitre, and all is safe. Then others come paddling down stream, and, arriving at the pool, stop, tumble and frolic, rolling over and over and round and round, and performing the most marvellous evolutions. They swing on the willow-spray, and dash with lightning velocity at a piece of floating bark, tumble with it, wrestle with it, and go through a hundred wonderful movements. They are motionless, then begin to play, and so continue for nearly an hour, when, as if suddenly alarmed, they rush down stream to their fishing-grounds, and leave us cold and benumbed. We plod through the meadow beneath the moon and stars, chilled to the marrow by the falling dew.

Otters are still abundant on the banks of most northern streams, as also among the rocks and boulders of the coast-line. Human invasion drives them from their haunts, although, where waters remain unpolluted, they not unfrequently pass up the rivers by towns and villages during the still night. Fitted for an aquatic existence, the structure of the otter beautifully exhibits the provisions suitable to its mode of life. On land it can travel swiftly, though the water is its best element. Immersed in this, its coat appears smooth and glassy. In pursuing its prey it performs the most graceful movements, doubling and

diving so rapidly that it is difficult to follow its movements. When fishing, its object is to get beneath the object pursued, as, from the construction of its eyes, which are placed high in the head, it is better enabled to follow its prey. This it seldom fails to secure. Its uniform dusky brown coat has, like all aquatic creatures, a soft underfur with long hair above.

The otter generally takes possession of a natural cavity, a drain, or a hole made by the inundation of the stream. The entrance is usually under water, and inclines towards the bank. Situations where the latter is overhung with bushes and with tall water-plants in the vicinity are generally chosen. From this, the young, when three or four weeks old, betake themselves to the water. If captured now, they may easily be domesticated. One of our friends has to-day a couple of young otters, which he leads about in a leash. At Bassenthwaite, a man and his son trained a pair of otters to fish in the lake. They would return when called upon, or follow their masters home when the fishing was over. The males in spring fight desperately; and once when hidden, we witnessed a fight which lasted two hours, and so engrossed did the combatants become, that we approached and, taking the part of the lesser, shot its aggressor.

And now a word as to the food of the otter. That it destroys fish we are not about to deny. But this liking for fish has become such a stereotyped 'fact' in natural history that it is glibly repeated, parrot-like, and so continues until most persons have come to accept it. The otter destroys but few fish, using the word in its popular acceptation. What it destroys are for food, and not out of love of killing. The greater part of its diet consists of fresh-water crayfish, thousands of which it destroys, and it is for these that long journeys are so frequently made. Many miles in a night are traversed for these crustaceans, the beds of mountain and moorland streams being tracked to their source, almost every stone on the way being examined. And at least upon two occasions have we found the remains of the water-hen after an otter's meal.

THIS MORTAL COIL.

CHAPTER XXIX.—ACCIDENTS WILL HAPPEN.

DURING the whole of the next week, the Squire and a strange artisan, whom he had specially imported by rail from London, went much about together by day and night through the grounds at Whitestrand. A certain air of mystery hung over their joint proceedings. The strange artisan was a skilled workman in the engineering line, he told the people at the *Fisherman's Rest*, where he had taken a bed for his stay in the village; and indeed sundry books in his kit bore out the statement—weird books of a scientific and diagrammatic character, chokefull of formulæ in Greek lettering, which seemed not unlikely to be connected with hydrostatics, dynamics, trigonometry, and mechanics, or any other equally abstruse and uncanny subject, not wholly alien to necromancy and witchcraft. It was held at Whitestrand by those best able to form an opinion in such dark questions, that the new importation was 'summat in the electric way;' and it was certainly matter of plain fact, patent to all observers equally, that he did in very truth fix up an elaborate lightning-conductor of the latest pattern to the newly-thrown-out gable-end at what had once been Elsie's window. It was Elsie's window still to Hugh: let him twist it and turn it and alter it as he would, he feared it would never, never cease to be Elsie's window.

But in the domain at large, the intelligent artisan with the engineering air, who was surmised to be 'summat in the electric way,' carefully examined, under Hugh's directions, many parts of the grounds of Whitestrand. Squire was going to lay out the garden and terrace afresh, the servants conjectured in their own society: one or two of them, exceedingly modern in their views, even opined in an off-hand fashion that he must be bent on laying electric lights on. Conservative in most things to the backbone, the servants bestowed the meed of their hearty approval on the electric light: it saves so much in trimming and cleaning. Lamps are the bugbear of big country houses: electricity, on the other hand, needs no tending. It was near the poplar that Squire was going to put his installation, as they call the arrangement in our latter-day jargon; and he was going to drive it, rumour remarked, by a tidal outfall. What a tidal outfall might be, or how it could work in lighting the Hall, nobody knew; but the intelligent artisan had let the words drop casually in the course of conversation; and the *Fisherman's Rest* snapped them up at once, and retailed them freely with profound gusto to all after-comers.

Still, it was a curious fact in its own way that the installation appeared to progress most easily when nobody happened to be looking on, and that the skilled workman in the engineering line generally stood with his hands in his pockets, surveying his handicraft with languid interest, whenever anybody from the village or the Hall lounged up by his side to inspect or wonder at it.

More curious still was another small fact, known to nobody but the skilled workman *in propriâ personâ*, that four small casks of petroleum from a London store were stowed away, by Hugh Massinger's orders, under the very roots of the big poplar; and that by their side lay a queer apparatus, connected apparently in some remote way with electric lighting.

The Squire himself, however, made no secret of his own personal and private intentions to the London workman. He paid the man well, and he exacted silence. That was all. But he explained precisely in plain terms what it was that he wanted done. The tree was an eyesore to him, he said, with his usual frankness—Hugh was always frank whenever possible—but his wife, for sentimental reasons, had a special fancy for it. He wanted to get rid of it, therefore, in the least obtrusive way he could easily manage. This was the least obtrusive way. So *this* was what he required done with it. The London workman nodded his head, pocketed his pay, looked unconcerned, and held his tongue with trained fidelity. It was none of his business to pry into any employer's motives. Enough for him to take his orders and to carry them out faithfully to the very letter. The job was odd: an odd job is always interesting. He hoped the experiment might prove successful.

The Whitestrand labourers, who passed by the poplar and the London workman, time and again, with a jerky nod and their pipes turned downward, never noticed a certain slender unobtrusive copper wire which the strange artisan fastened one evening, in the gray dusk, right up the stem and boles of the big tree to a round knob on the very summit. The wire, however, as its fixer knew, ran down to a large deal box well buried in the ground, which bore outside a green label, 'Ruhmkorff Induction Coil, Elliott's Patent.' The wire and coil terminated in a pile close to the four full petroleum barrels. When the London workman had securely laid the entire apparatus, undisturbed by loungers, he reported adversely, with great solemnity, on the tidal outfall and electric light scheme to Hugh Massinger. No sufficient power for the purpose existed in the river. This adverse report was orally delivered in the front vestibule of Whitestrand Hall; and it was also delivered with sedulous care—as per orders received—in Mrs Massinger's own presence. When the London workman went out again after making his carefully worded statement, he went out clinking a coin of the realm or two in his trousers' pocket, and with his tongue stuck, somewhat unbecomingly, in his right cheek, as who should pride himself on the successful outwitting of an innocent fellow-creature. He had done the work he was paid for, and he had done it well. But he thought to himself, as he went his way rejoicing, that the Squire of Whitestrand must be very well held in hand indeed by that small pale lady, if he had to take so many cunning precautions in secret beforehand when he wanted to get rid of a single tree that offended his eye in his own gardens.

The plot was all well laid now. Hugh had nothing further left to do but to possess his soul in patience against the next thunderstorm. He had not very long to wait. Before the month was out, a thunderstorm did indeed burst in full force over Whitestrand and its neighbourhood—one of those terrible and destructive east-coast electric displays which invariably leave their broad mark behind them. For along the low, flat, monotonous East Anglian shore, where hills are unknown and big trees rare, the lightning almost inevitably singles out for its onslaught some aspiring piece of man's handiwork—some church steeple, some castle keep, the turrets on some tall and isolated manor-house, the vane above some ancient castellated gateway.

The reason for this is not far to seek. In hilly countries the hills and trees act as natural lightning-conductors, or rather as decoys to draw aside the fire from heaven from the towns or farmhouses that nestle far below among the glens and valleys. But in wide level plains, where all alike is flat and low-lying, human architecture forms for the most part the one salient point in the landscape for lightning to attack: every church or tower with its battlements and lanterns stands in the place of the polished knobs on an electric machine, and draws down upon itself with unerring certainty the destructive bolt from the overcharged clouds. Owing to this cause, the thunderstorms of East Anglia are the most appalling and destructive in their concrete results of any in England. The laden clouds, big with electric energy, hang low and dark above one's very head, and let loose their accumulated store of vivid flashes in the exact midst of towns and villages.

This particular thunderstorm, as chance would have it, came late at night, after three sultry days of close weather, when big black masses were just beginning to gather in vast battalions over the German Ocean; and it let loose at last its fierce artillery in terrible volleys right over the village and grounds of Whitestrand. Hugh Massinger was the first at the Hall to observe from afar the distant flash, before the thunder had made itself audible in their ears. A pale light to westward, in the direction of Snade, attracted, as he read, his passing attention. 'By Jove!' he cried, rising with a yawn from his chair, and laying down the manuscript of *A Life's Philosophy*, which he was languidly correcting in its later stanzas, 'that's something like lightning, Winifred! Over Snade way, apparently. I wonder if it's going to drift towards us?—Whew—what a clap! It's precious near. I expect we shall catch it ourselves shortly.'

The clouds rolled up with extraordinary rapidity, and the claps came fast and thick and nearer. Winifred cowered down on the sofa in terror. She dreaded thunder; but she was too proud to confess what she would nevertheless have given worlds to do—hide her frightened little head with sobs and tears in its old place upon Hugh's shoulder. 'It's coming this way,' she cried nervously after a while. 'That last flash must have been awfully near us.'

Even as she spoke, a terrific volley seemed to burst all at once right over their heads and shake the house with its irresistible majesty. Winifred buried her face deep in the cushions. 'O Hugh,' she cried in a terrified tone, 'this is awful—awful!'

Much as he longed to look out of the window, Hugh could not resist that unspoken appeal. He drew up the blind hastily to its full height, so that he might see out to watch the success of his deep-laid stratagem; then he hurried over with real tenderness to Winifred's side. He drew his arm round her and soothed her with his hand, and laid her poor throbbing aching head with a lover's caress upon his own broad bosom. Winifred nestled close to him with a sigh of relief. The nearness of danger, real or imagined, rouses all the most ingrained and profound of our virile feelings. The instinct of protection for the woman and the child comes over even bad men at such moments of doubt with irresistible might and majesty. Small differences or tiffs are forgotten and forgiven: the woman clings naturally in her feminine weakness to the strong man in his primary aspect as comforter and protector. Between Hugh and Winifred the estrangement as yet was but vague and unacknowledged. Had it yawned far wider, had it sunk far deeper, the awe and terror of that supreme moment would amply have sufficed to bridge it over, at least while the orgy of the thunderstorm lasted.

For next instant a sheet of liquid flame seemed to surround and engulf the whole house at once in its white embrace. The world became for the twinkling of an eye one surging flood of vivid fire, one roar and crash and sea of deafening tumult. Winifred buried her face deeper than ever on Hugh's shoulder, and put up both her small hands to her tingling ears, to crush if possible the

hideous roar out. But the light and sound seemed to penetrate everything: she was aware of them keenly through her very bones and nerves and marrow; her entire being appeared as if pervaded and overwhelmed with the horror of the lightning. In another moment all was over, and she was conscious only of an abiding awe, a deep-seated afterglow of alarm and terror. But Hugh had started up from the sofa now, both his hands clasped hard in front of his breast, and was gazing wildly out of the big bow-window, and lifting up his voice in a paroxysm of excitement. 'It's hit the poplar!' he cried. 'It's hit the poplar! It must be terribly near, Winnie! It's hit the poplar!'

Winifred opened her eyes with an effort, and saw him standing there, as if spellbound, by the window. She dared not get up and come any nearer the front of the room, but, raising her eyes, she saw from where she sat, or rather crouched, that the poplar stood out, one living mass of rampant flame, a flaring beacon, from top to bottom. The petroleum, ignited and raised to flashing-point by the fire which the induction coil had drawn down from heaven, gave off its blazing vapour in huge rolling sheets and forked tongues of flame, which licked up the crackling branches of the dry old tree from base to summit like so much touchwood. The poplar rose now one solid column of crimson fire. The red glow deepened and widened from moment to moment. Even the drenching rain that followed the thunder-clap seemed powerless to check that frantic onslaught. The fire leaped and danced through the tall straight boughs with mad exultation, hissing out its defiance to the big round drops which burst off into tiny balls of steam before they could reach the red-hot trunk and snapping branches. Even left to itself, the poplar, once ignited, would have burnt to the ground with startling rapidity; for its core was dry and light as tinder, its wood was eaten through by innumerable worm-holes, and the hollow centre of mouldering dry-rot, where children had loved to play at Hide-and-seek, acted now like a roaring chimney flue, with a fierce draught that carried up the circling eddies of smoke and flame in mad career to the topmost branches. But the fumes of the petroleum, rendered instantly gaseous by the electric heat, made the work of destruction still more instantaneous, terrible, and complete than it would have proved if left to unaided nature. The very atmosphere resolved itself into one rolling pillar of fluid flame. The tree seemed enveloped in a shroud of fire. All human effort must be powerless to resist it. The poplar dissolved almost as if by magic with a wild rapidity into its prime elements.

A man must be a man come what may. Hugh leaped towards the window and flung it open wildly. 'I must go!' he cried. 'Ring the bell for the servants.' The savage glee in his voice was well repressed. His enemy was low, laid prone at his feet, but he would at least pretend to some spark of magnanimity. 'We must get out the hose!' he exclaimed. 'We must try to save it!' Winifred clung to his arm in horror. 'Let it burn down, Hugh!' she cried. 'Who cares for the poplar? I'd sooner ten thousand poplars burned to the ground than that you should venture out on such an evening!'

Her hand on his arm thrilled through him with horror. Her words stung him with a sense of his meanness. Something very like a touch of remorse came over his spirit. He stooped down and kissed her tenderly. The next flash struck over towards the sandhills. The thunder was rolling gradually seaward.

Hugh slept but little that eventful night; his mind addressed itself with feverish eagerness to so many hard and doubtful questions. He tossed and turned and asked himself ten thousand times over—was the tree burnt through—burnt down to the ground? Were the roots and trunk consumed beyond hope—or rather beyond fear—of ultimate recovery? Was the hateful poplar really done for? Would any trace remain of the barrels that had held the tell-tale petroleum? any relic be left of the Ruhmkorff Induction Coil? What jot or tittle of the evidence of design would now survive to betray and convict him? What ground for reasonable suspicion would Winifred see that the fire was not wholly the result of accident?

But when next morning's light dawned and the sun arose upon the scene of conflagration, Hugh saw at a glance that all his fears had indeed been wholly and utterly groundless. The poplar was as though it had never existed. A bare black patch by the mouth of the Char, covered with ash and dust and cinder, alone marked the spot where the famous tree had once stood. The very roots were burned deep into the ground. The petroleum had done its duty bravely. Not a trace of design could be observed anywhere. The Ruhmkorff Induction Coil had melted into air. Nobody ever so much as dreamed that human handicraft had art or part in the burning of the celebrated Whitestrand poplar. The *Times* gave it a line of passing regret; and the Trinity House deleted it with pains as a lost landmark from their sailing directions.

Hugh set his workmen instantly to stub up the roots. And Winifred, gazing mournfully next day at the ruins, observed with a sigh: 'You never liked the dear old tree, Hugh; and it seems as if fate had interposed in your favour to destroy it. I'm sorry it's gone; but I'd sacrifice a hundred such trees any day to have you as kind to me as you were last evening.'

The saying smote Hugh's heart sore. He played nervously with the button of his coat. 'I wish you could have kept it, Winnie,' he said not unkindly. 'But it's not my fault.—And I bear no malice. I'll even forgive you for telling me I'd never make a poet; though that, you'll admit, was a hard saying. I think, my child, if you don't mind, I'll ask Hatherley down next week to visit us.—There's nothing like adverse opinion to improve one's work. Hatherley's opinion is more than adverse. I'd like his criticism on *A Life's Philosophy* before I rush into print at last with the greatest and deepest work of my lifetime.'

That same evening, as it was growing dusk, Warren Relf and Potts, navigating the *Mud-Turtle* around by sea from Yarmouth Roads, put in for the night to the Char at Whitestrand. They meant to lie by for a Sunday in the estuary, and walk across the fields, if the day proved fine, to service at Snade. As they approached the mouth they looked about in vain for the familiar landmark. At first they could hardly believe

their eyes: to men who knew the east coast well, the disappearance of the Whitestrand poplar from the world seemed almost as incredible as the sudden removal of the Bass Rock or the Pillars of Hercules. Nobody would ever dream of cutting down that glory of Suffolk, that time-honoured sea-mark. But as they strained their eyes through the deepening gloom, the stern logic of facts left them at last no further room for syllogistic reasoning or *a priori* scepticism. The Whitestrand poplar was really gone. Not a stump even remained as its relic or its monument.

They drove the yawl close under the shore. The current was setting out stronger than ever, and eddying back against the base of the roots with a fierce and eager swirling movement. Warren Relf looked over the bank in doubt at the charred and blackened soil beside it. He knew in a second exactly what had happened. 'Massinger has burned down the poplar, Potts,' he cried aloud. He did not add, 'because it stood upon the very spot where Elsie Challoner threw herself over.' But he knew it was so. They turned the yawl up stream once more. Then Warren Relf murmured in a low voice, more than half to himself, but in solemn accents: 'So much the worse in the end for Whitestrand.'

All the way up to the *Fisherman's Rest* he repeated again and again below his breath: 'So much the worse in the end for Whitestrand.'

(*To be continued.*)

THE LAND OF FIRE.

Readers of the recently published *Life of Charles Darwin* will remember that during his voyage in the *Beagle* the great naturalist saw something of Tierra del Fuego; and the account he gives of the country serves to remind us what an unimportant and little known part of the world it is. We have most of us a vague notion that it is a desolate region in the extreme south of South America, inhabited by savages; but few of us are prepared to commit ourselves to any more definite statements regarding it. Even geographical specialists have, until recently, known but little about the country, as, since its discovery by Magellan in 1520, it has remained almost unnoticed and unexplored, the occasional efforts which have been made in that direction having been partial and unsuccessful. For this, physical causes are largely responsible. Owing to the rough seas and persistent winds which during a great part of the year prevail along its shores, sailing vessels doubling Cape Horn have taken care not to approach the land too closely, and as a rule sight only some small islands off the south, which English sailors know as the Digarameries, a corruption of Diego Ramirez, the name bestowed on them by the Spaniards. The passage through the Strait of Magellan is, owing to currents and devious channels, only practicable for steamers, and even this class of vessels has only recently begun to make use of that route. It is not surprising, therefore, that Tierra del Fuego has hitherto attracted but little attention, and that the busy world has been content to let it alone. Of late, however, circumstances have arisen which give the country interest and supply information about it.

Within the past five years it has been the subject of more thorough and scientific investigation than has ever been previously attempted. Lieutenant Bové, of the French navy, has, by permission of the Argentine government, and partly under its patronage, made an expedition to the south-east portion of Tierra del Fuego; and his labours have resulted in a valuable Report on the fauna, flora, and general characteristics of the country, and the condition and language of the people. Another even more valuable contribution to our knowledge on the subject has been made by the Rev. Thomas Brydges, a Church of England missionary, who has lived in the south-eastern part of Tierra del Fuego for over twenty-five years, and has during that long residence accumulated an important amount of information about the country and its inhabitants. Mr Julius Popper, a man of scientific antecedents, has also, on behalf of a Mining Company, recently made an expedition right across the country from Useless Bay on the west to San Sebastian on the east, and thence along the coast. Lastly, Don Ramon Lista, a well-known explorer, and a member of the Geographical Society of Buenos Ayres, has just returned from a scientific and geographical expedition to the east and south-east coasts, undertaken at the instance of the Argentine government. These combined sources of information have served to correct many errors hitherto current about the country, and to add to our knowledge in many important respects.

The group of islands which form the archipelago of Tierra del Fuego have an area of about eighty thousand square miles, nearly the same size as England and Scotland. Darwin describes the country as 'a mountainous land, partly submerged in the sea, so that deep inlets and bays occupy the place where the valleys should exist. To find an acre of level land in any part of the country is most rare.' Don Ramon Lista, however, who has had greater and more recent opportunities of investigation, thinks this description a mistaken one. He describes Argentine Tierra del Fuego as presenting two aspects: in the north, there are valleys more or less extensive, covered with splendid groves, and irrigated by large rivers, some of which are navigable; this region enjoying an agreeable temperature, with very little snow during the winter. South of this he reports that the appearance of the country changes, and extended forests appear, where the grass is not so abundant or the rivers so large. The face of the land is in this part something like Switzerland, with small lakes, elevated mountains, and valuable timber forests. He seems to think the country capable of great development, for he adds: 'On the plains there will yet be planted a great pastoral industry, while I believe the mountains will be found to contain valuable mineral deposits.'

The geological formation of Tierra del Fuego corresponds with that of Patagonia; its mountains are the continuation and southern extremity of the Andes; whilst the plains and uplands correspond to the Patagonian steppes. In some parts the formation is decidedly volcanic; pumice-stone is found in large quantities, and granite and quartz are abundant. On the other

hand, limestone, iron, and coal seem to be wanting. Gold has been found in considerable quantities in the north, and for a number of years the enterprising Chilians have been washing it at the foot of the chain of hills which forms the coasts of Useless and Future Bays. The climate is certainly not the best in the world, but its disadvantages seem to have been a good deal exaggerated by casual visitors, who have perhaps been unfortunate as to times and localities. Mr Brydges tells us that in the humid regions of the west, frosts are almost unknown; while in the central and eastern parts, where the sky is nearly always cloudless, there is intense cold during the four months from June to September. He adds, that the want of sufficient heat in summer is the great drawback to the climate, and is a greater inconvenience than the cold in winter, which has never been known to be lower than twelve degrees Fahrenheit, while the highest summer temperature is only seventy-five degrees. If it were not for the raw, damp winds, the climate of Tierra del Fuego would be much better than that of Canada. While there are probably few streams in the country which are of sufficient size ever to be utilised for navigation, there is a large number of small rivers and watercourses, which carry off the rains and melted snow from the mountains, and thus assist to irrigate the lower plains.

Travellers' reports as to the inhabitants of Tierra del Fuego have been conflicting. Some visitors have reported the natives to be stalwart, fine-looking men, and others have described them as small and abject beings. Darwin, whose scientific investigations were confined to the south of the country, says that 'one can hardly believe them to be fellow-creatures and inhabitants of the same world.' On the other hand, other explorers in the north and north-west describe the Fuegians as powerful men of large stature and warlike instincts. This apparent discrepancy seems to be due to the fact that the land is inhabited by two very distinct races of Indians. Mr Brydges, whose long residence in the country enables him to speak with authority on this point, assures us that there are two separate and distinct tribes dwelling in Tierra del Fuego. He calls them, as they call themselves, Onas and Yahgans; the former living in the north, and the latter in the south. The Onas seem to be almost identical in character, manners, and language with the Tuehelche Indians of Patagonia. Like them, they use bows and arrows in the chase, and are muscular, active, and well formed. Their number is now much reduced, an epidemic of measles having been very fatal among them a few years ago, and the whole tribe probably does not now number more than five hundred persons. They are nomadic, and live principally in portable tents, covered with guanaco skins. Mr Popper did not form a high opinion of their intellectual faculties, judging from the primitive nature of their implements. He describes their tools as consisting for the most part of pieces of iron, taken from some vessel cast on shore, and tied to pieces of wood by leather thongs. They have no canoes, and do not fish, though they pick up on the shore such fish as are left behind after heavy tides. Their only water-vessels are large shells; but they display some ingenuity in making arrows and baskets.

The Yahgans, who inhabit the southern portion of Tierra del Fuego, are an altogether different people from the Onas, and have with some reason been considered as the most miserable species of humanity in the western hemisphere. They are quarrelsome and treacherous, and are governed entirely by their desires and passions. Very dexterous in the management of canoes, they live largely by fishing, but are very destitute even of the simplest appliances for cooking and comfort. Some of the tribe are of fair size, but others are extremely diminutive and abject looking. Mr Brydges, however, who has lived among them nearly a quarter of a century, says they are not so degraded as they have been represented, and he particularly repudiates the charge of cannibalism which has been made against them. They have been found capable of some small measure of civilisation, but, like the Onas, have suffered severely from epidemics, especially from smallpox. Their number is now considerably below three thousand. Mr Brydges describes their language as 'soft, rich, and very full;' how rich and full, may be inferred from his almost incredible statement that he has accumulated a vocabulary of no fewer than thirty thousand words. To find such a wealthy language among so low a race is a curious circumstance, and one worthy of consideration by ethnologists.

Such are a few of the latest particulars about this little-known territory. Even the name by which it is known is a misnomer, it being a land of frost rather than a land of fire. It received the latter title from its discoverer, Magellan, who, when passing its northern coasts, noticed night after night a succession of small fires, which he supposed to be due to some mysterious natural causes. In reality, they were beacons lighted by the natives; but the original mistake has given a permanent name to the country, and is typical of many other mistakes which have since been made about it.

MIN:

A RAILROAD STORY OF THE FAR WEST.

CHAPTER V.—CONCLUSION.

It was towards the close of the afternoon, and Mr Ferris was preparing to leave his office for the day, when the door opened to admit a man who was rather 'seedy' in his appearance, and whose once handsome face bore unmistakable traces of recent dissipation. The Superintendent turned an inquiring glance at his visitor, whom he evidently did not recognise; but Min, who was the only other occupant of the room, felt sure that she had seen the fellow before. It was Sam Ripley, the discharged engineer of No. 404! Ripley was not actually intoxicated, but he had evidently reached that stage of chronic drunkenness when the brief intermissions of comparative sobriety are so nearly akin to intoxication, that steadiness of step and clearness of speech are impossible achievements. For some reason or other, the ex-engineer felt disposed to be insolent. Without removing his cap, he addressed Superintendent Ferris: 'How do, boss!'

'Well, my man, what is it?'

'Don't take a feller up so short, boss—don't sound well. My name's Ripley—Samuel J. Ripley. Don't 'pear to remember old acquaintances? Strange, too. You orter know me, 'cause you fired for me one night when I handled the throttle of old 404 an' took your special from 'Stan'ople to Prairie City. Good joke on you as well as on me, wasn't it?—Ah, I see you remember!'

'Yes, sir; decidedly I remember it all. I wonder that you have the consummate impudence to come into my office, when, if your deserts were dealt to you, a gaol should hold you. Doubtless, you have some extraordinary reason for intruding—let's hear it.'

'Very good, boss. I came for a pass to Prairie City.—Yes, sir, I said a *pass*. Write it out favour of Samuel J. Ripley, Chicago to Prairie City, Nebraska; an' if you feel like throwing in a five-dollar bill, so much the better.'

'Are you crazy, man?' inquired the official.

'No, mister, I am *not* crazy—not even "chuck" at the present moment; an' if you will listen to me for a minute, I think you will fill out the pass.'

Here Ripley winked in the direction of Min—in whom he had not recognised the prairie waif he had often seen at 44-mile—as much as to ask if he should speak out before the girl.

Ferris understood the gesture. 'You can speak before that young lady,' he said. 'She hears all my business, and can keep it to herself.'

'Very good, boss; it don't make no difference to me. Now, I'm bound to get down Prairie City way. You see, whisky's pretty nearly got the best o' me, an' before long I expect to turn up my toes to the daisies. Before that there melancholy time arrives, I've got a leetle bizness to transact with that darned meddlin' operator who spoiled my little game that night with the special.—Don't say a word, boss; I hain't got nothin' against *you* for that. You was the boss—it was your bizness to checkmate us, if you could. But that there sneakin' agent—bah! What bizness had he to interfere with us fellers? It was none o' *his* funeral! So I'm goin' to have a leetle bit of a reck'nin'. Mebbe I'll git the worst of it—mebbe I won't. He played his cards; now, I'll play mine; an' if I can take the odd trick, why, Sam Ripley'll be ahead of the game. Very well. I ain't strong enough to tramp over a thousand miles, and I've got no money; consequently, I must have a pass.'

'This is all idle talk and wasted breath, Ripley,' said the Superintendent. 'I care nothing about your private grudges, and in any case would not assist you in your evil designs against a man who did his duty, and perhaps saved my life.—No, sir; no pass.'

'Stop a minute, boss,' interrupted Ripley. 'So far my story hasn't interested you, and hasn't done me much good. You're a big man amongst railroaders, and you've got a big record all through the West for being a smart, shrewd, and conscientious manager. That's so, isn't it?'

Ferris nodded his head, in assent.

'Well, be careful you never lose that record. Listen! About twelve years ago I was working on a railroad in Indiana. There were a couple of clever boys, brothers, in the Train Despatcher's Office. The oldest was the Chief Despatcher himself, and the younger was his assistant. One night there was a nasty collision.' Ripley paused as he noticed Robert Ferris's face grow deathly pale, while his hands trembled violently.

Ferris recovered his composure quickly, though his voice was rather unsteady as he asked: 'What is all this twaddle to me?'

'Oh, nothing, nothing, boss.—Shall I go on?'

'Yes; but cut it short.'

'Very good, boss.—I think you know that story pretty well. Perhaps you don't know that the young fellow is still alive, and sees you once in a while?—Oh, he's no friend of mine; curse him! and I shouldn't get the story into the newspapers to help *him*.—But if I should take it into my head to resurrect that little affair, and start some smart Chicago reporter investigating, it might prove rather embarrassing for that older brother, don't you think?'

But Robert Ferris was already filling out a blank trip pass, which he handed to Ripley together with a five-dollar bill. 'Be careful, my lad,' said the Superintendent, as the whisky-soaked rascal shambled out of the office.

Min had heard every word of this strange conversation, and it came to her as a painful two-fold revelation. She could not doubt that Ripley meant to harm Macpherson in some way; nor could she believe otherwise than that Robert Ferris was the elder brother for whom Arthur had given up name and fame. Either of these discoveries was sufficient to decide Min as to her future course. She must warn and assist Arthur, which she could only thoroughly do by at once proceeding to 44-mile; and her sense of pride, as well as loyalty to Arthur, would not permit her to retain a position in the office of such a man as Robert Ferris.

The Superintendent had left, having followed closely on the heels of Ripley. Min did not mind that, however, for she would not have accepted the favour of a pass at his hands, and she did not feel like bidding him a courteous farewell. So she left a note on Ferris's desk, telling him that she had left Chicago as well as his employ, and that she would write to him shortly, giving her reasons in detail. That night she bought a ticket, and boarded the Pacific Express on the C. R. M. & P.

About thirty-six hours later, the long and heavy train drew up at 44-mile, and agent Macpherson was greatly surprised to find that it became necessary for him to assist a young lady to alight. She was a very pretty and very graceful young lady, becomingly apparelled in a perfect-fitting dress and sacque, while upon her head she wore a hat that displayed the good taste of a graduate in the milliner's art. Arthur thought there must be some mistake, till he saw the well-remembered face. 'Min!'

'Dear old Arthur!'

They held each other's hands as the train steamed away across the prairie, from which the night-mists were rolling before the morning sunlight, and then, hand in hand, they walked into the little office. For several minutes neither spoke; but in those first moments, as they gazed each into the other's eyes, all secrets and all misunderstandings seemed to roll away and disappear with the prairie mists outside: they loved

with a deep, true, and lasting love that was intensely mutual—and both knew it.

'I've come back, Arthur—to you.'

And for answer Arthur took her in his arms and kissed the fresh red lips which were to be his for evermore. The lonely life, that had been hungering and thirsting for love, was more than satisfied.

Of course there were many questions to ask and to answer, Min perhaps having the most to tell. 'I know everything now, Arthur. I know who you are, and who Mr Ferris is. I know, too, that Sam Ripley will find it hard work to do you much harm, when he discovers that he has two to fight instead of one. Besides, forewarned is forearmed, and if I ever see Mr Ripley around this place, I shall let him know that it was I who sat in the Superintendent's office and overheard the recital of his schemes.

Later in the day, Min disclosed a plan of her own. 'Now, Arthur, you know I am not a "child of the plains" any longer. I am a Chicago young lady, who cannot plead ignorance of the proprieties. I want to stay right here, and never leave 44-mile again until we leave together. But to do that we must be married—you did ask me, didn't you?—and I want the wedding to be in the dear old depot. The Atlantic Express still goes through at two o'clock in the morning, I believe? Very well. You take that train to New Constantinople, hunt up a minister, and bring him out here as soon as you can.—You might bring Ratty Sykes along as a witness. Isn't that a good and practicable plan?'

'It is splendid,' said Arthur, highly delighted to find that the girl was so thoroughly in earnest. 'Only you will have to take charge of the station while I am gone.'

'Of course. From now, on, I resume my position as assistant-operator at 44-mile.'

So at two o'clock on the dark and chill October morning, Arthur took the train as a passenger for Constantinople. When he boarded the front coach he did not notice in the darkness a man who alighted from the rear car; nor did the passenger who disembarked see the agent as he stepped on to the train. The new arrival at 44-mile evidently wished to remain unnoticed, for, instead of entering the little depot, he ensconced himself behind a pile of firewood which stood perhaps a dozen yards from the shanty. The man bore a striking resemblance to the ex-engineer Sam Ripley, and he repeatedly muttered to himself as he eyed the little curtained window of the telegraph cabin, behind which the light was dimly burning.

Min stood just inside the doorway as she watched Arthur take his departure; then she stepped in and closed the door. The morning was very chilly, and the fire had burned quite low. Upon the wall she saw an old hat and coat of Arthur's which she remembered well. She had often worn them in the days gone by; why not now? So she put them on, and somehow, the familiar dress of the man she loved seemed to make her less lonely. Then she sat down upon the worn kitchen-chair at the shabby ink-stained telegraph table, and with the finger of an expert rattled off a message to Constantinople, informing them that the Atlantic Express had left 44-mile. That done, she threw herself into Arthur's armchair, which stood exactly midway between the lamp and the low window on the west side of the room. Her back was toward the window, and the light threw the shadow of her head and shoulders upon the curtain. So she sat, and gave her fancies loose rein, as they carried her forward into the future—the future which would know her as Arthur Macpherson's wife.

Outside, in the cold night, the man behind the woodpile muttered and cursed. He was shivering, and, as he shivered, his courage—such as it was—began to ooze away. 'Curse him! why not? He spoiled my game, and lost me my job. He ruined me and sent me to the dogs. He might as well have killed me.—Ah, no better chance than this! This is luck, Sam, my boy!' The villain spoke thus as the shadow of a man's head and shoulders fell distinctly across the window. Ripley knew that hat; he had seen Macpherson wearing it many times. He pulled from his hip-pocket a loaded revolver; he cocked it, levelled it, and fired. With the crack of the report, there was the noise of shattered glass, but never a cry or a sound from the girl who had sat in that chair dreaming her happy day-dreams. The bullet had done its work well. Min was dead.

This was Min's home-coming! Of Arthur's, a few hours later, why should we write? Why prolong the details of this simple and sad record of a girl's short life? To this day there is a station at 44-mile, and Arthur Macpherson, a broken-hearted man, is still the agent and operator. The mills of the gods have not yet brought Robert Ferris beneath their ponderous wheels; for Arthur's silence will last till death, and the bones of the only other man who held the secret of the collision lie bleaching on the prairies.

The sweet breezes of summer and the howling blizzards of winter, as they sweep around the lonely cabin at 44-mile, also kiss—gently or fiercely—a white marble slab upon which is chiselled MIN.

THE SPONGE-FISHERIES OF THE MEDITERRANEAN.

THE following interesting information as to the sponge-fisheries of the Mediterranean, which appeared in *The Board of Trade Journal*, is extracted from a paper contained in the Proceedings of the Constantinople Chamber of Commerce:

The principal places from which sponges are exported are situated in the eastern portion of the Mediterranean. The only exception is the Bahamas, in the West Indies. The Bahama sponges, however, are the poorest in quality which reach the market. The sponge of Tunis, from the extreme resistance of its tissue, is an article of general utility, for it can be put to the commonest uses. The most valuable sponges, however, are those which come from the coast of Syria and the Greek Archipelago.

The depth of the water beneath which it is found has a great influence on the quality of the sponge. That which is gathered on a rocky or sandy bottom is much superior to that which grows upon a muddy ground. The best Tunis sponges are of the former character, and are prin-

cipally found near Kerkeni and on the rocks of the little island of Kamontes. The inferior quality comes from the Gulf of Cabes, where the bottom is muddy, and these have unhealthy-looking red roots. In a natural condition, the Tunis sponge is black and covered with a viscous matter which forms the polyp of the sponge, and contains a considerable quantity of sand and mud.

In the Tunisian waters the sponge-fishery is carried on most actively and profitably during the months of December, January, and February. The late autumnal storms have by that time cleared the sponges of the seaweeds and other plants which concealed them, and the eye can easily detect them. It is considered, calm weather and a transparent sea being indispensable, that not more than forty-five days can be counted upon each season. The men employed in the Tunisian sponge-fishery are almost exclusively Greeks or Sicilians, and the former are found the more skilful. There are several modes of collecting sponges. They are plucked with the hand by help of a diving-bell, they are harpooned, or they are dragged up with an instrument which resembles the sort of drag used for fishing up oysters. The diving-bell can only be used where there is a hard bottom, and the harpoon is the instrument mainly employed by sponge-fishers.

The Arabs go out in parties of five, six, or seven persons in a small boat. One man holds the trident and watches the bottom of the sea, striking where he sees a sponge; but the Arabs are rarely successful in a depth of more than eight or ten metres. The method of the Sicilians is almost the same as that of the Arabs, except that their boats take only two men, one to row and the other to strike. The Sicilians fish in deeper water than the Arabs, and secure more sponges than they, and of a better quality. The Greeks, who for the most part come from Kalimno and Syria, are the chief employers of the drag. But the great majority of these also hold to the trident, which they use with extraordinary cleverness.

The island of Kalimno, on the south-western coast of Asia Minor, between Cos and Leros, contains a population of about twelve thousand, all the adult males being engaged in the sponge-fishery. They leave the island in May, and return in September at the latest. The islanders of Kalimno exercise their profession of sponge-fishers off the shores of the islands of the kingdom of Greece, of the Southern Sporades, and specially of Rhodes, of Crete, of the whole extent of Syria, of the island of Ruad, and finally of Tunis, where their vessels are so large and so well manned that they drive the Arabs and Sicilians completely out of the field. They take the sponges back to Kalimno, where they are sold, the council of the island constituting a court which decides all differences between fishermen, captains, proprietors, merchants, and retail purchasers. The Kalimniotes usually fish at a depth of from fifteen to twenty feet; below this there are no sponges which possess any commercial value. The divers have to be men of adult age and of great physical strength; they can in no case remain at the maximum depth of twenty feet for more than two minutes. They select the good from among the bad sponges by touch, tearing away those which seem to be the best, and place them in a pouch fastened round the neck. Quite recently a new method has been adopted, the wearing of a water-tight diving-dress called a *scaphandro*, made of metal and provided with glass windows; in this dress men are able to remain at the bottom of the sea for two or three hours and collect the sponges at their ease.

The Kalimniote fishermen are in the habit of dividing the sponges which they sell into three classes—those of fine quality, those which are large in size, and those which are inferior in quality, which they call *tsimouches*. The island possesses two hundred vessels engaged in this industry. The Kalimniotes find that the largest and most delicate sponges are discovered on the coast of the little island of Stambalia, off Amorgo, and on one or two spots on the African littoral. The second quality are those of Crete, of Bengazi, of Rhodes, and of Syria. The sponges of the Kalimniotes find their way into almost all the markets of the world. England is the largest consumer; and France, Germany, Russia, Austria, and Italy follow.

An industry in artificial sponges is in process of creation. M. Oscar Schmidt, Professor at the University of Grätz, in Styria, has invented a method by which pieces of living sponge are broken off and planted in a favourable spot. From very small cuttings of this kind, Professor Schmidt has obtained large sponges in the course of three years and at a very small expense. One of his experiments gave the result that the cultivation of four thousand sponges had not cost more than two hundred and twenty-five francs, including the interest for three years on the capital expended. The Austro-Hungarian government has been so much struck with the importance of these experiments that it has officially authorised the protection of this new industry on the coast of Dalmatia.

A MILITARY MANŒUVRE.

Captain Hugh Fluker was a quiet, unobtrusive man, upon whom certain youthful subalterns had bestowed the cognomen of 'the fossil.' Though he was steady and prosaic, nevertheless everybody in the Royal Slopshire Regiment voted him one of the best officers that ever held Her Majesty's commission. He was rather elderly, with iron-gray hair, a well-trained military moustache, and a pleasant expression; he dressed faultlessly, and was always the pink of politeness. Frequently he might have been seen walking along the shady side of the High Street at Blankford, where the regiment was quartered, and upon such occasions he peered a good deal under the bonnets of the pretty women; but there was a demure expression in his glance which withered any rising feeling of resentment. His age and his unmistakably sympathetic half-smile gave him an immunity which would not be extended to younger and bolder men.

At the mess of the Royal Slopshire the merits and demerits of the damsels of Blankford, marriageable and otherwise, were nightly discussed, and more than once had 'the fossil' been twitted with his apparent lack of interest in the fair sex. But he had shaken his head, and replied with a grave smile, almost of sadness, that his days of flirtation were over, that such

things must be left to the boys. His brother-officers had not failed to notice his gravity, and hence the popular belief that he had been crossed in love. Though Captain Fluker was a member of the Blankford Club—an institution where everybody knew everybody else, and where old fogies played whist for points not exceeding one penny—and his conduct in public was most exemplary, yet somehow he had but few friends. The men who ought to have been in his set—or of whose set he ought to have been—did not care for his company. Nor did the female leaders of Blankford society give him great countenance, for, if the truth must be told, he was 'horribly slow,' and it was generally admitted that there was something queer about Fluker. Though he led the almost idyllic life of a grave, sedate, old bachelor, yet somehow Blankfordians had an indefinable distrust in him which was utterly unaccountable.

The denizens of Blankford were a set of cheerful people who clubbed together their resources to make the time pass pleasantly, and who made no attempt to outshine one another. But on the arrival of the Royal Slopshire from Egyptian deserts, everything suddenly changed, and the residents—especially those possessed of the marketable commodities yclept 'marriageable daughters'—began to show off and give junketings upon the most approved principle, presumably in the hope of capturing some of the heroic officers. Those holding commission in the regiment thoroughly enjoyed themselves; but Captain Fluker held aloof from most of these pomps and vanities, and shunned the husband-huntresses.

This sort of thing went on for a year, when a whispered rumour caused much consternation in the garrison. It was, that 'the fossil' had actually entered for the matrimonial stakes. Such a proceeding was so unlikely, that it was considered a huge joke, until somebody at mess announced as a positive fact that the fair lady was none other than Miss Prudence Grimes. This was greeted by a good deal of laughter, for the lady in question was a rawboned spinster of fifty, who lived with her sister in a prim little cottage on the London Road.

'By Jove,' exclaimed the Honourable Bertie Oofington, an affected and moustacheless young sub., 'always thawt "the fossil" would go in for lucre and ugliness. But he's been confoundedly quiet over it.'

'Yes; they say he's been engaged to her for months, and that's why he don't mix with the gay element of ours,' remarked his neighbour.

'Engaged! is he?' echoed a dozen voices.

'Yes; going to marry her in a few weeks, if all I hear be true.'

'Suppose he'll retire on his wife's income,' observed Oofington. 'But I say, you Johnnies, I wish we could have a spree with him before he's spliced.'

A dozen voices assented to this proposal; and various modes of hoaxing 'the fossil' were at once suggested.

Whilst this conversation was in progress, Captain Fluker sat in the cosy little drawing-room at Yew Cottage. He had negotiated a *recherché* dinner just to his taste, and was now alone with his *fiancée*. Prudence Grimes was by no means a giddy young thing. She wore dresses of brocaded silk; and her hair was dressed in long corkscrew curls upon each side of her face. But before marriage, a multitude of faults are hidden, and Hugh Fluker considered her the only woman in the world that he could make his wife. Their courtship was always of the most formal character, and as they were sitting together she was saying: 'I vowed I would never marry, for, until I met you, Hugh, dear, I never saw a man whom I could trust.'

'And you trust me, Prudence?' he said.

'Yes,' she answered. 'It is because I trust you that I accepted your offer of marriage. But I wish to speak more seriously, more privately to you. You have told me that you possess no income beyond your pay, have you not?'

'That is true, alas!' he said.

'Well,' said she hesitatingly, 'my income is a good one; the expenses attending our marriage will be great, and therefore I want you to accept a small sum from me.'

He looked at her in astonishment, wondering what she could mean.

'Yes,' she continued; 'I am a woman of business, you know. Now, I want you to take Holly Lodge, furnish it properly, and have a wedding which cannot be sneered at all over the town. This, of course, cannot be done for nothing; so I have paid in one thousand pounds to a London bank in your name.'

'What!' he exclaimed. 'A thousand pounds for me?'

'Yes,' she replied, walking over to her davenport. 'Here's the pass-book and cheque-book. You can, if you like, for convenience, transfer the money to the Blankford Bank.' And she handed him the books.

'Well, really, Prudence, this is indeed very thoughtful of you,' replied the captain. 'I hardly like to accept the money, for'——

'But you must. I insist upon it. I want a costly and fashionable wedding, and I'll have it.'

'Why cannot I pay for it?'

'I will pay myself, because I do not wish to cripple your resources,' said she, smiling pleasantly as she added, 'of course you will not be offended?'

'No, no; not in the least, Prudence. It is awfully good of you, though, yet I suppose it will be all the same after we are married.'

Captain Hugh Fluker went to the bank on the following day, and negotiated the matter as Miss Prudence had suggested.

It is needless for us to dilate upon the manner in which his brother-officers greeted the news of his approaching marriage, how they chaffed him, or how good-humouredly he took it all. Of course the financial matter was a secret, though he told them he had taken Holly Lodge and was about to furnish it.

Preparations for the marriage were proceeding apace, and a month had already passed, when a very pretty young damsel arrived in Blankford and took up her duties as assistant to the local postmaster. Ethel Ellsworthy was decidedly handsome; and within a week of her arrival, the golden youth, both military and civil, had lost their hearts to her. Never before was the post-office so well patronised, for during office hours the place was filled with the masher element,

who bought stamps and postal orders, sent telegrams, or required letters weighed, as an excuse for basking for a few seconds in the winning smiles of the siren behind the brass network. Chief amongst the worshippers at this shrine was young Bertie Oofington of the Slopshire, for he visited the post-office not less than a dozen times a day.

As may be imagined, this idolatry of a common post-office clerk caused the noses of many of the young ladies in the higher walks of life to be considerably elevated, as they waxed exceeding wrath that their attractions should be so totally eclipsed. At the officers' mess of the Slopshire she was the chief topic of conversation, and the subs one and all were exerting every effort to outdo each other in gaining her affection. Showers of presents in the form of fans, perfumes, flowers, and other trifles they poured in upon her, yet they could not fail to recognise the fact that she gave more encouragement to Oofington than to anybody else, and were very envious in consequence. They sorrowfully abandoned all hope of success, however, when it was made known that Bertie was her chosen admirer.

The Honourable Bertie Oofington, the pet of the Royal Slopshire, was the eldest son and heir of Lord Heaviswell, a rich old peer; and Blankford society was all agog when, within three weeks of her arrival, it was announced that he was actually engaged to be married to her. There was one man who remonstrated with him: it was Fluker.

'Look here, Bertie,' he said one evening as he was smoking with him in his quarters. 'The whole place is poking fun at you for flirting with that little girl at the post-office. What do you really mean to do?'

'Mean to do? Why, marry her, of course,' replied he.

'Well, my boy,' said Fluker gravely, 'I'm some years your senior, and my advice to you is, break the engagement before it goes too far.'

'I certainly shan't do that,' exclaimed the younger man; 'neither do I see any reason why you should interfere with my private affairs, even if you were my great-grandfather.'

'Forgive me. I advise you for the best.—What would his lordship say to such a *mésalliance?*'

'My father has nothing whatever to do with the matter. I love her, and by Jove, I'll marry her in spite of everything.'

'Very well,' replied Fluker, puffing vigorously at his cigar; 'but remember, I have given you my advice.' And the subject was allowed to drop.

The banns had been duly published between Hugh Fluker, bachelor, and Prudence Grimes, spinster, and no objection was made, although the parson requested all who might see any impediment to come forward and declare it.

One evening, Oofington went down to meet Ethel; but found, to his astonishment, that she had gone out half an hour earlier than usual. She had distinctly told him to meet her at eight o'clock, and yet she did not keep her appointment. Could she be playing him false, after all? The green-eyed monster rose within him, and he resolved to watch for her return. He had waited for nearly two hours in the shadow on the opposite side of the street, when he saw two figures approaching. As they came nearer, he recognised his *fiancée* and Fluker! His first impulse was to rush across the road and confront them, but on a moment's reflection, he remained concealed. He saw Fluker speaking to her very earnestly, then he kissed her, shook hands, and she let herself in with a latchkey, whilst her companion strode away in the direction of the barracks. The Honourable Bertie muttered a curse, and soon overtook his rival. 'Now, Fluker,' stammered he, white with dismay and fury, 'what do you mean by daring to take Miss Ellsworthy for a walk? I understand now why you were so anxious I should give her up. You wanted her yourself.'

The man addressed turned coolly round and said: 'I have advised you to have nothing more to do with her, and I fancy you'll find I'm right after all. But it's no use getting out of temper over it; so good-night.' And he walked away.

The young lieutenant, boiling over with indignation, turned on his heel, and muttering a savage threat, retraced his steps.

Next morning the gossips of Blankford had a titbit of scandal to relate, for Ethel Ellsworthy had eloped with Captain Fluker. They had taken the early morning train to London.

When the news was broken to Miss Prudence, she had a fit of hysterics straight away; but she quickly recovered, and almost speechless with indignation, she cried: 'The monster! the swindler! He has robbed me of my heart, and swindled me out of my money. Oh, what a fool I was to part with that thousand pounds! But I'll bring an action for breach of promise, that I will.'

'Yes, to think that he should have lowered himself to run away with that minx only three days before his marriage,' said her sister. 'Long ago, I told you, Prudence, that these military men are all deceivers.'

'And well I know it,' moaned Miss Prudence.—'Oh, to think he should leave me in this manner.'

Later that day, she went down to the local bank in the hope of recovering some of the money she had given him, but found, to her dismay, that on the previous day it had all been drawn out. So she returned to Yew Cottage in a most unhappy frame of mind.

On the evening of the day previous to that fixed for the wedding, Hugh Fluker returned to Blankford alone, and at once sought his bride. He knocked, and was admitted to the drawing-room to await her.

In a few minutes she appeared. Her face wore an unutterable look of disgust, and she drew herself up to her full height as she said: 'Captain Fluker, I consider it the greatest presumption on your part to come here after your scandalous conduct.'

'Scandalous conduct!' he exclaimed in amazement. 'I'm at a loss to understand what you mean, my dear.'

'Don't address me in that manner, sir. Do you think I am not fully aware of your journey to London, and of your, your—companion?'

'Yes, that is true. I have been to London upon some business connected with our marriage; but as for my companion, I don't think you need have any cause to be jealous of her.'

'Indeed, and why not?'

'Well, merely because she is my sister,' replied the captain with a smile.

'Your sister!'

'Yes, my sister, by my mother's second husband. I did not tell you before, as I was not anxious that the fellows of ours should know that I had a sister in a post-office.'

'Oh, Hugh dear!' exclaimed Miss Prudence, 'I judged you harshly. Pray, forgive me; but I really thought you had eloped with her.'

'Well, there isn't much harm in taking one's sister up to town,' said Fluker; 'but the fact is, young Oofington is in love with her, and I'm trying to save him from making an ass of himself without his father's consent. I have seen his father Lord Heaviswell, and informed him of the facts. Ethel will be back to-morrow in time for our wedding.'

Blankford was never so puzzled as on the following morning, when the marriage took place at the parish church. There was a crowded assembly to witness the ceremony, and the arrangements were upon the most costly and fashionable scale.

Next day, Bertie Oofington received a letter from Scarborough, whither the happy couple had gone to spend their honeymoon, giving a full explanation, but asking that it might be kept secret. The young lieutenant laughed heartily, and vowed that 'the fossil' was a brick after all.

Upon their return to Blankford, Ethel took up her abode with them, and resigned her duties at the post-office. Six months afterwards, through the death of his lordship, the Honourable Bertie succeeded to the title and estates. He at once sent in his papers, and as soon as decorum would allow, made Ethel Lady Heaviswell.

But the good people of Blankford are still puzzled. They cannot make out what relation she is to Captain Fluker, though they feel certain there must be some family connection.

THE MONTH:

SCIENCE AND ARTS.

Relics of old London are getting scarcer and scarcer as the modern builder clears the ground for new houses. Roman London lies about fifteen feet below the present level of the City streets, and yields up occasionally a tribute of coins, tesselated pavement, or a few Roman ornaments. Antiquaries are just now much exercised about the preservation of a fine piece of Roman work which has recently been unearthed near the General Post Office, consisting of about one hundred feet of the veritable wall of London. As this discovery has been made on government property, it is to be hoped that arrangements will be made to preserve such an interesting memorial of olden times.

Professor Lintner, of New York, a well-known entomologist, has expressed the opinion that if fruit-growers wish to be successful they should study the habits of insects and the nature of their food, so that they may be competent to tell friends from foes, and may be able to use insecticides to the best advantage. The Professor affirms that there are in the world three hundred and twenty thousand species of insects, and that from seven to eight thousand may be considered as fruit-pests.

Mr William A. Gibbs, of Chingford, Essex, whose hay-drying and tea-drying machines were noticed by us some years ago at the time of their invention, has recently constructed a machine by which pure hot air is derived direct from the combustion of coal. The operation is brought about partly by chemical agency and partly by mechanical appliances, and is said to be so effectual that all trace of smoke disappears, and the products of combustion, instead of consisting of irrespirable gases, take the form of hot air which can be inhaled without danger or inconvenience. We have not at present any details of the construction of the machine; but if it prove as successful as it is stated to be, its application to the arts and to domestic use will cause a revolution in the present methods of burning fuel, and should settle the smoke-abatement question.

Woodhall Spa, in Lincolnshire, contains a mineral spring which is unusually rich in bromine and iodine, resembling in its composition the waters of the celebrated *Bad* at Kreuznach. This spa has been acquired by a syndicate, who hope to induce their countrymen to avail themselves of the benefits it affords, instead of seeking the same remedy in Germany. The baths are fitted with the orthodox 'Pump-room,' and every convenience for patients and visitors.

A writer in the *Century* magazine recently gave some curious statistics referring to the chances of being hit by bullet or shell in modern warfare. He quotes an old saying to the effect that 'it takes a man's weight in lead to kill him,' and he shows by the returns from more than one battle-field that the axiom is literally true. As a case in point, he alludes to the battle of Stone's River, one of the greatest during the American War. In the official Report of this battle it is stated that the artillery fired 20,307 rounds of ammunition, representing a weight of 225,000 pounds. The infantry fired two million rounds, being a weight of lead which exceeded 150,000 pounds. These two weights combined are fully equal to the weight of the men killed or mortally wounded—who numbered 2319. Another calculation with regard to this battle takes note of the wounded, and is given in another form. Here it is stated that 20,000 rounds of artillery hit 728 men, and that the two million infantry rounds hit 13,832 men; averaging 27·4 cannon-shots to hit one man, and 145 musket-shots to hit one man. The old adage which states that 'every bullet has its billet' would seem, therefore, to require some qualification. It is at anyrate a comfort to consider that the modern soldier has so many chances against being shot, for, according to these figures, for every bullet which finds its billet, exactly one gross go astray.

Mr Pritchard Morgan, the proprietor of the gold mine at Dolgelly, has at length so far satisfied the claims of the government that work has been resumed. The quartz still produces a high average of gold per ton, and Mr Morgan is strongly of belief that there is untold wealth in the district. He states that the gold-field extends over a range of country from sixty to one hundred miles in length, by forty miles in breadth. It is said, however, that this mine is likely to be eclipsed in importance by another one which

has just been discovered at Festiniog. This discovery was made by accident, some men being engaged in quarrying, when they came upon some quartz sprinkled with brilliant specks of metal. Specimens of the ore were forwarded to Mr Lowe, the public analyst of Chester, who immediately detected the metal to be gold. Later on, Mr Lowe was invited to visit the place and to make a general survey of it. His geological knowledge quickly enabled him to direct the miners to open the reef at a certain point, and they soon unearthed some very fine specimens of gold quartz. On analysis, the ore yields the large amount of five ounces of gold to the ton.

It has long been known that fish, like birds and insects, are attracted by and will swarm round any source of illumination. Birds are killed in thousands by flying against the thick glass which protects lighthouse lanterns, and various insects are caught with the help of a light. The difficulty of maintaining a subaqueous light has hitherto prevented the application of the same principle to fishing. But now that we have at command an electric illuminant which is quite independent of oxygen, and which will therefore give light in a closed chamber, the difficulty is at an end. With lamps arranged for the purpose, the United States steamship *Albatross* has been catching multitudes of the finny tribes, the lamps being enclosed in wire-netting to obviate risks of breakage. It is curious to note that if this method of fishing is found to be advantageous enough to become common, it will have a distinct bearing upon the disputes which have arisen between the American and Canadian fisher-folk, for the former will have no longer any need of troubling the latter for bait.

It is to be hoped that the recent agitation with regard to England's weakness from a military point of view will not have the effect of unduly hurrying on the adoption of the new Magazine rifle, for, according to the recent Report of General Wasmund, of the Russian army, who has been making a continental tour for the purpose of studying the magazine guns used by various powers, the new arm possesses certain disadvantages which might not at first be apparent. The soldier, he says, regards the many cartridges in his gun as so much reserve power, and is therefore apt to neglect those precautions which he would naturally take when his piece must be reloaded after each discharge. He found, too, that after a long march those men who were armed with the old-fashioned rifle made far better target practice than those who carried the new weapon. One reason for this would be that in the case of the first, the weight and poise are constant, whereas in the latter they must vary as the contents of the magazine are discharged.

There is a touch of romance in a true story recently published concerning the discovery of a sunken rock in the Red Sea. During the year 1887, two ships struck on a submerged rock in these historic waters, and soon afterwards foundered. A search was at once made for the dangerous obstruction, but without success. A second and more careful search was then made, again unsuccessfully. At last a surveying vessel was sent out for a six weeks' cruise for the sole purpose of finding this hidden rock; but the search was fruitless. But a fourth expedition by H.M.S. *Stork* has been at last successful, and the rock has been found. It consists of a patch of coral only fifteen feet beneath the surface of the water; and although it is out of the direct line of vessels traversing the sea, it would be quite possible for them, by strong currents, to be carried in the direction of the obstacle. Bearing in view the enormous tonnage that navigates this sea in modern times, the discovery is a very important one.

All visitors to country districts know full well that in some places farmyards are kept in the most filthy condition, the animals therein often being left to drink from some pond which by its colour and smell at once proclaims its foul condition. It would seem impossible that the milk from cows so badly provided for should constitute healthy food, and according to certain experiments recently made by Professor Law at Cornell University, such milk is contaminated with living organisms to an alarming extent. This gentleman caused some cows to drink for several days from one of these stagnant pools, and when he afterwards examined the milk from them, microscopically, he found it full of living organisms of an identical character to those contained in the pond. The cows were then examined, and found to be in a feverish condition, their blood being charged with the same minute creatures. Some pure milk was then mixed with some of the pond-water, when it was found that they multiplied to a surprising extent in the liquid. The lesson to be obtained from these experiments is obvious.

It is well known that a large proportion of colliery explosions are either directly due to or are much aggravated in intensity by the presence of suspended coal-dust in the air of the workings. To avoid this danger, Messrs Martin & Turnbull, of Dowlais, Glamorgan, have invented a method by which the air in mines can be kept constantly damp. Water is forced by compressed air into spray, both agents being carried by pipes to any part of the mines where danger is supposed to lurk. This fine spray is quickly diffused by the air-currents in the workings, and effectually damps the dust with which it comes into contact.

Whilst the use of alcoholic beverages of all kinds is rigidly condemned by a certain section of the community, 'the cup that cheers but not inebriates' is often charged with various ill doings. The last indictment brought against the pleasant cup of tea is that of destroying the teeth. Surgeon W. T. Black, writing to the *British Medical Journal*, informs us that when on duty at certain recruiting stations in the north of England he made observations on the great amount of disease and loss of teeth existing among the men who offered themselves for service. In a great many instances individuals were rejected on the score of the state of their teeth; and he was led to trace this disease to the excessive tea-drinking commonly indulged in by the working classes in the manufacturing towns. He asserts that tea seems to have a peculiar effect upon the teeth, leading to inflammation, and eventually abscess of the fang. It would be useful to know whether these observations can be corroborated by other medical men.

According to the *Electrician*, a magnetic crane is employed at some steel-works at Cleveland, Ohio, for lifting steel ingots and heavy masses of iron. The magnet is of the electric form,

consisting of two rods of soft iron covered with insulated coils of wire, and receiving a current from a battery or dynamo-machine. It will lift a weight of eight hundred pounds without difficulty.

M. Bone has brought forward a plan for dealing with the rabbit pest in Australia, which he believes would be found more economical than the methods suggested by M. Pasteur, and better in every way than the present methods of extermination adopted by the Australian government. He suggests that a poisonous gas should be introduced into the burrows of the animals; and he names carbonic oxide, the vapour of carbonic disulphide, and carbonic acid gas as those which would be cheap and effectual. The apparatus for the ready generation of these gases is not described; and upon that part of the scheme would we should think depend its practicability.

This rabbit pest in Australia seems to have its counterpart in a plague of rats in China, which latter forms the subject of a memorial to the Emperor which is published in the *Pekin Gazette*. This memorial comes from the governor of a district in outer Mongolia, who testifies to the presence of swarms of rats, which for some two years past have destroyed all the grass in the land, and have so undermined the ground with their burrows that mounted men are exposed to serious risks. For this reason it has become necessary to alter the routes of the government courier service in several of the postal lines. The old story of Dick Whittington and his cat seems more worthy of credence after reading this account.

A new and terrible era in the science of warfare is foreshadowed by a torpedo shell, which has lately been manufactured at Waterbury, Connecticut, for the dynamite gun invented by Captain Zalinski. This shell is made of seamless three-sixteenth-inch brass, and has been drawn out cold by means of hydraulic pressure. It represents a cylinder nearly seven feet long, with a conical end, with an inside diameter of fourteen inches, and it weighs two hundred pounds. This metal case is destined for the reception of six hundred pounds of explosive gelatine. The complete projectile will form an explosive mass of awful power, and one which no ship afloat or fortification on shore could possibly withstand.

The great engineering feat of moving a large hotel bodily by means of haulage, to which we recently devoted a brief notice, has now been successfully accomplished at Coney Island, New York. The building was first raised in sections by means of hydraulic jacks, and was placed on cars, wheeled on rails, under it. The distance traversed was nearly five hundred feet; and the weight of the building, a wooden structure, together with the trucks or cars on which it was placed, was estimated to amount to six thousand tons. The whole operation was carried through without accident or hitch of any kind. Its success will certainly turn renewed attention to the feasibility of Captain Eads' scheme of a ship railway, which was thought at one time to be a formidable rival to the Panama Canal. It is now argued, and with reason, that if a large house can be safely moved by such means, a ship, built to resist strains of every kind, could be far more easily dealt with.

The *Indian Daily News*, which is published in Calcutta, tells of the successful treatment of a case of snake-bite. Dr Vincent Richards was engaged in a number of experiments with some cobras; and while he was holding one of the reptiles with the object of procuring some of its poison in a watch-glass, the snake bit him severely in the left hand. The doctor immediately killed the snake, laid the wound in his finger open to the bone, and applied to it permanganate of potash, at the same time applying a ligature to the finger, and another below the elbow. He then sought medical help. His confrères reopened the wound; and after cauterising with nitric acid, it was dressed in the ordinary manner. Dr Richards gradually recovered from the accident, and is reported to feel no ill effects from it.

Owing chiefly to the enterprise of several traders, the fiftieth year of Queen Victoria's reign is likely to be well impressed on our memories, the word Jubilee having been attached to goods of the most opposite descriptions. Mr Asshton Smith is determined that the event shall be recorded in a very prominent way. He has caused to be planted on the side of a mountain in Wales, Moel Rhimen by name, a plantation of nearly seven thousand trees, which will be so arranged as to represent the words 'Jubilee, 1887.' The letters each measure two hundred yards long, by twenty-five feet wide; and two hundred men, it is said, have found constant employment in planting the trees since Jubilee day, when the work was commenced.

There is nothing new under the sun, not even type-writers. It has just been discovered that as early as the year 1829 the type-writing machine, under the name of Typographer, was invented, drawings and specifications of which were deposited at the United States' Patent Office at that date. It is said that these drawings closely resemble the machines now in use.

According to the *Lancet*, in certain districts in the north of Ireland ether is largely used as an intoxicant. A special kind of ether is prepared for drinking purposes, and its success in supplanting whisky appears to be owing to its cheapness; for a person can obtain for a penny sufficient of the potent fluid to intoxicate him. It may be here mentioned that the so-called chloric ether, which, under its newer name of spirits of chloroform, is prescribed to give a pleasant flavour to nauseous draughts, has often been used as a stimulant by inebriates who have had access to it. It is not ether, but consists of a solution of chloroform diluted in nineteen parts of rectified spirit. With regard to the ether sold for drinking purposes, it is asserted that the Excise authorities have been applied to, but that they have no power to control its sale.

A widespread belief has arisen within the last few months to the effect that modern stained glass windows do not possess that permanence which distinguishes those of medieval date. Mr Phillip Newman recently read an interesting paper before the members of the Society for the Encouragement of Fine Arts upon this subject. In this paper he fully describes the process of glass-staining, and dwells upon the destructive effect which the bad air of ill-ventilated churches will often have upon stained windows. He believes that the colours produced by modern workers are

quite as good as those of older times, while at the same time they present a far greater variety of tint. In certain cases, the colours have undoubtedly faded, but only where the glass has been painted with colours containing soft fluxes. Where the glass has been carefully fired and proper silicated flux has been used, the pigments will defy time and the destructive effects of bad air.

THE NEW EXPLOSIVE:

CARBO-DYNAMITE.

To the already long list of so-called high explosives—of which there are about thirty—used in industrial pursuits or for war purposes, another very powerful explosive agent has just been added. As its name, carbo-dynamite, implies, carbon forms part of its constitution. It should be stated that in ordinary dynamite seventy-five per cent. of nitro-glycerine is absorbed by twenty-five per cent. of Kieselguhr, an earthy mineral specially suitable for the manufacture of dynamite on account of its absorbent property; but Kieselguhr has this disadvantage, that it is incombustible. In carbo-dynamite, ninety parts by weight of nitro-glycerine are taken up by ten parts of a specially prepared carbon of a very porous nature. As carbon is combustible, it adds to the explosive effect of the whole mass; and in this respect, it will be seen, carbo-dynamite is superior to ordinary dynamite.

But it possesses other advantages, which were demonstrated at recent trials carried out at Treherbert, Rhondda Valley, South Wales. In the first experiment, an eighty-pound double-headed steel rail, placed on its side, was smashed through by an ounce and a half of carbo-dynamite, about nine inches of the rail being blown clean away. In the next, a large boulder of hard sandstone, weighing about two tons, was broken up by a two-ounce charge of carbo-dynamite. Equal charges of a quarter-ounce of carbo-dynamite and ordinary dynamite were also exploded inside two thick lead cylinders of a capacity of four and three-fourth cubic inches, with the result that this capacity was expanded to nearly thirty-six cubic inches with carbo-dynamite, but to only twenty-one inches with ordinary dynamite. Similar charges of the two explosives were then placed inside two thick steel tubes each one foot long. The ordinary dynamite burst its tube well; but the carbo-dynamite charge did its work much better, bending the tube as well as bursting it, and sending it flying some fifteen yards from the point of explosion. The last experiment in the open consisted in placing one ounce each of carbo-dynamite and ordinary dynamite on flat steel discs, three inches in diameter and five-sixteenths of an inch thick, and supported on rings or collars. After the explosion, it was found that the ordinary dynamite had indented its disc a quarter of an inch; while the carbo-dynamite had caused a concavity seven-sixteenths of an inch deep, or three-sixteenths of an inch deeper than the other, besides driving its supporting ring deeply into the ground.

In order to show that, in using carbo-dynamite in underground work, no noxious fumes arise, an experiment was made in a tunnel, half a mile long, constructing for the Rhondda and Swansea Bay Railway. When a shot had been fired in the rock at the heading of the tunnel with one pound of carbo-dynamite, no deleterious fumes could be detected. When, however, subsequently, a shot was fired with one pound of ordinary dynamite, noxious vapours were plainly discernible. Carbo-dynamite, consequently, will enable miners to pursue their arduous work without injury to health, and the advantage claimed for it, that no injurious fumes are generated in its explosion, seems to be well established. As carbo-dynamite is not affected by moisture, not exuding or parting with its nitro-glycerine when exposed to damp or water, it may safely be mixed with that liquid in any required proportion, and, thus treated, used in fiery mines, the large volume of steam generated at the moment of explosion not only extinguishing any flame which might have been produced, but also adding considerably to the effect of the shot. It is further stated that the manufacture of carbo-dynamite is simple and inexpensive, and that its cost to the user will not exceed that of ordinary dynamite. These latter points remain, of course, to be proved; but from what has been said of its use and effect, there can be no doubt that a very formidable rival has arisen to ordinary dynamite, and that the introduction of carbo-dynamite in mining or tunnelling work is only a question of time.

A SEA IDYLL.

Last night I saw the mermaids ride
On shore-bound waves with music wild,
And watched them where, against the cliffs,
Their bowers of snowy foam they piled.

All night they worked; but when the dawn
Came blushing rosy o'er the deep,
The sea, grown weary of the toil,
Recalled his waves, and sank to sleep.

The mermaids wept, and combed their hair,
Melted were all their foam-wreathed bowers,
Till one sweet mermaid sang, 'Let 's make
New arbours of the white sea-flowers.'

'Yes, yes,' they cried; and hand in hand,
Sank through the blue depths joyously;
And now, I ween, they 're gathering flowers
In the bright gardens of the sea.

Alice Staples Carter.

The Conductor of Chambers's Journal begs to direct the attention of Contributors to the following notice:

1st. All communications should be addressed to the 'Editor, 339 High Street, Edinburgh.'

2d. For its return in case of ineligibility, postage-stamps should accompany every manuscript.

3d. To secure their safe return if ineligible, All Manuscripts, whether accompanied by a letter of advice or otherwise, *should have the writer's Name and Address written upon them* in full.

4th. Offerings of Verse should invariably be accompanied by a stamped and directed envelope.

If the above rules are complied with, the Editor will do his best to insure the safe return of ineligible papers.

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NORTH BRITISH & MERCANTILE INSURANCE COMPANY

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Life Department.

THE Directors of this Company have been enabled at each succeeding quinquennium to congratulate the Policyholders on the *increasing prosperity of the Life Business;* the *Surplus* declared, of which the Policyholders received 90 per cent, having been—

In 1865	£150,000	In 1875	£257,000
„ 1870	£192,000	„ 1880	£333,000

In 1885 . . . £396,000

But these figures taken alone do not disclose *the whole advantages secured for the Assured.* While in 1860, 1865, and 1870, the valuations were made by the Carlisle Table, and in 1875 by the H^{mf} Table, in 1880 a much severer test, that of the H^{m} Table, and 3½ per cent interest, was applied; and in 1885 the still severer test of the H^{m} Table with 3¼ per cent interest, whereby an additional sum, amounting to no less than **£130,000**, as contrasted with the reserve of 1880, was reserved for the further security and future profit of the Assured. The change from the one table to the other has thus absorbed a large sum which it will not be necessary again to provide.

The rate of Bonus to Policyholders has been increasing. In 1875, and on several previous occasions, it was £1 : 5 : 0 per cent per annum. In 1880 it was £1 : 7 : 6, and in 1885 it was £1 : 9 : 0. The Bonus is declared on the compound system; that is, it is calculated upon the sums insured and Bonuses previously added. In this way the Bonus of 1885, although nominally at the rate of £1 : 9 : 0, ranged from £1 : 9 : 0 on a new Policy to no less than £2 : 17 : 10 per cent per annum on the amount originally insured by the oldest. This feature of the Company's practice ought to be kept prominently in view, and the distinction enforced between an Office which gives a Bonus calculated on subsequent additions as well as on the original amount of the Policy, and those Offices which give Bonus calculated on the original amount alone.

An Intermediate Bonus (calculated on the sum insured and existing Bonuses), from the date of the last Division to the date of death, is allowed in the case of participating Policies which have been five years in force and become claims by death before next Division of Profits.

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1. **Assurance by Yearly, Half-Yearly, or Quarterly Payments** during the whole period of life.

This Scheme is for those who are able now, and who anticipate that they will continue to be able to pay during life the ordinary Premium.

2. **Assurance if death shall occur within any given period.**

This Scheme is for those who desire to provide, at as low a rate as possible, for the contingency of death within a given period.

3. **Half-Premium System.**

Under this Table the Premiums for the first five years are about one-half of those payable under Scheme I., while those for the remainder of life are slightly higher.

The advantages of this Scheme are, that the Assured gets all the benefit of taking out a Policy in early life, while health is unimpaired, at a low rate, and so escapes the weight of heavy Premiums during that period when he may be least able to pay them.

4. **Terminable Premiums.**

By this Scheme the Sum Assured is payable at death, but payment of the Premium ceases in 10, 15, 20, or 25 years, as the Assured may prefer.

This Scheme is for those who, in the active years of life, are able to pay a large premium, whereby they escape all burden in the later years of life. A Policy effected under it possesses special **Non-Forfeitable advantages,** *for if at any time after payment of the Premium for the second year the Policy is sent to the Office for endorsement, it may without further payment remain in force for such a proportion of the sum assured as the number of Premiums paid bears to the number originally payable.*

The attention of intending Assurers is specially invited to this Scheme.

5. **Endowment Assurance System.**

Policies effected on this system are payable to the Assured himself at the end of a specified number of years, should he be then alive, or to his heirs at his death, if that event occur before the expiry of the specified number of years. The Assured, who receives the proceeds of the Policy, can invest the amount; and instead of paying an Annual Premium to the end of life, as he would require to do under an ordinary Policy, he may, on attaining the specified age, begin to receive the annual interest of an investment.

The Policy thus becomes a provision for the Assured himself in his old age, and should he have no near relatives to whom the capital may be left, he may expend it in the purchase of an Annuity, which this Company will grant on exceptionally favourable terms.

6. **Annual Premiums for Assurance on Two Joint Lives**—the money to be payable at the death of the first that fails.

This Scheme is useful for partners in trade; and it also provides for the case of those who may be able to afford mutual support during Life—the income of the survivor, however, being insufficient for himself alone.

The Company grants **Assurances** on the lives of persons **Abroad, or about to proceed Abroad,** at Moderate Rates. Separate Tables have been prepared for residents in India and China, and these form a special feature in the Company's Business.

The Company also provides **Endowments for Children,** payable on the attainment of a specified age. These may be effected by single or annual Premiums.

NORTH BRITISH & MERCANTILE INSURANCE COMPANY.

ANNUITY BRANCH

THE COMPANY grants **Annuities** to Persons of all Ages on very favourable terms:—

1. Immediate Annuities, payable yearly, half-yearly, or quarterly.
2. Deferred Annuities, to commence after the expiry of any number of years; and either with or without return of Premiums in the event of death before attainment of the age selected for commencement of the Annuity.
3. Survivorship Annuities, to commence after the failure of one or more lives, and either with or without return of Premiums.

FIRE DEPARTMENT

THE COMPANY was established as a Fire Office in 1809.

Property of nearly all descriptions Insured, at Home or Abroad, at the lowest Rates of Premium corresponding to the risk.

The Company holds itself responsible, without extra charge, for damage done by explosion of Gas in a building not forming part of any Gas Work.

The Policies of the Company now extend to cover loss or damage by Lightning *to the property insured*, whether set on fire thereby or not.

RESOURCES OF THE COMPANY

As at 31st December 1887

I. CAPITAL—			
Authorised Capital	£3,000,000	0	0
Subscribed Capital	2,500,000	0	0
Paid-up Capital	625,000	0	0
II. FIRE FUND—			
Reserve	£1,250,000	0	0
Premium Reserve	396,642	2	9
Dividend Reserve Fund	100,000	0	0
Balance of Profit and Loss Account	41,470	14	7
	£1,788,112	17	4
III. LIFE FUND—			
Accumulated Fund (Life Branch)	£3,772,579	2	11
Do. do. (Annuity do.)	682,436	4	11
	£4,455,015	7	10

REVENUE FOR THE YEAR 1887

From the Life Department			
Net Life Premiums, Interest, &c.	£502,526	4	2
Annuity Premiums (including £125,024 : 6 : 2 by single payment) and Interest	150,479	16	2
	£653,006	0	4
From the Fire Department			
Net Fire Premiums, Interest, &c.	1,279,343	18	10
	£1,932,349	19	2

The Accumulated Funds of the Life Department are free from liability in respect of the Fire Department, and in like manner the Accumulated Funds of the Fire Department are free from liability in respect of the Life Department. The Investments of the Life and Annuity Branches are therefore, in this Office, kept absolutely distinct from those of the Fire Department, and will be found separately set forth in the Balance-Sheet.

NORTH BRITISH & MERCANTILE
INSURANCE COMPANY

NEW & IMPORTANT FEATURES IN THE LIFE DEPARTMENT.

Claims paid on proof of death and title, and not at end of three months after proof of death as formerly.

Premiums adjusted to each half-year of age.

Minimum Surrender Values fixed, and held at credit of Insured for five years.

Paid-up Policy of liberal amount granted in place of lapsed policy, if desired within six months.

Error in proposal papers not to involve forfeiture of policy unless accompanied by fraud.

Policies in most cases world-wide from outset.

ESTABLISHMENT FOR 1888.

PRESIDENT.—HIS GRACE THE DUKE OF ROXBURGHE.

VICE-PRESIDENT.—HIS GRACE THE DUKE OF SUTHERLAND, K.G.

Extraordinary Directors.

RIGHT HON. LORD NORTHBOURNE.
RIGHT HON. THE EARL OF STRATHMORE.
RIGHT HON. THE EARL OF ABERDEEN.
SIR MATTHEW WHITE RIDLEY, Bart., M.P
RIGHT HON. LORD WOLVERTON.

General Court of Directors.

DAVID DAVIDSON, ESQ., *Chairman.*

EDINBURGH.

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SIR JAMES GARDINER BAIRD, Bart.
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HON. HENRY J. MONCREIFF.
SIR JAMES H. GIBSON-CRAIG, Bart.
RIGHT HON. THE EARL OF ELGIN.
RIGHT HON. SIR THOMAS CLARK, Bart., Lord Provost of Edinburgh.
CHARLES B. LOGAN, Esq.

Manager.—A. GILLIES-SMITH, F.R.S.E.

Secretary.—PHILIP R. D. MACLAGAN.

Actuary.—THOMAS WALLACE.

Medical Officer.
JOHN MOIR, M.D., F.R.C.P.

Solicitors.
J. & F. ANDERSON, W.S.

LONDON.

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ALEXANDER DRAKE KLEINWORT, Esq.
GEORGE E. SCARAMANGA, Esq.

Manager of Fire Department.
G. H. BURNETT.

Foreign Sub-Managers. PHILIP WINSOR. E. A. DE PAIVA.

Manager of Life Department & Actuary.
HENRY COCKBURN.

Secretary.—F. W. LANCE.

Medical Officers. HERMANN WEBER, M.D. H. PORT, M.D.

Solicitor.—SIR W. R. DRAKE.

Auditor.—JAMES HALDANE, Chartered Accountant.

Chief Offices { EDINBURGH, 64 PRINCES STREET. LONDON, 61 THREADNEEDLE STREET, E.C.

Printed by R. & R. CLARK, *Edinburgh.*

ESTABLISHED 1845.

New York Life

INSURANCE COMPANY.

Conducted under the Official Supervision of the Insurance Department of the Government of the State of New York. Reports deposited annually with the Board of Trade in Great Britain, in accordance with "The Life Assurance Companies Act, 1870."

TRUSTEES FOR GREAT BRITAIN AND IRELAND,

With whom is deposited 250,000 Dollars in United States Bonds (for the protection of all Policy Holders and Annuitants) and 100,000 Dollars in the same Bonds (as additional protection for the representatives of deceased Policy Holders), or equal to over £70,000 in all.

THE RIGHT HON. HUGH C. E. CHILDERS, M.P., F.R.S.
FREDERICK FRANCIS, ESQ., *Director London & County Bank.*
A. H. PHILLPOTTS, ESQ., CARSHALTON, SURREY.

BANKERS { LONDON & COUNTY BANK, 21, LOMBARD STREET, E.C.
BANK OF BRITISH NORTH AMERICA, 3, CLEMENT'S LANE, LOMBARD STREET, E.C.

SOLICITORS—MESSRS. ASHURST, MORRIS, CRISP & CO., 6, OLD JEWRY, E.C.

LIFE ASSURANCE ONLY. PURELY MUTUAL.

All Profits belong to Policy Holders, and Apportionments are made annually.

STATEMENT for Year ending December 31st, 1887:—

ACCUMULATED FUNDS	£16,976,616
SURPLUS over Liabilities by the new State Standard of Valuation (4 per cent. Actuaries')	£2,437,611
INCOME FOR YEAR	£4,442,560

ACTUAL RESULTS.

The following Policies were taken out on the following plan at the London Office of the NEW YORK LIFE INSURANCE COMPANY (76 & 77, CHEAPSIDE), in 1872, and having matured in 1887, were then paid:—

Plan—15-YEAR ENDOWMENT—15-Year Tontine Investment.

POLICY NO.	POLICY AMOUNT.	ANNUAL PREMIUM.	TOTAL AMOUNT PAID BY COMPANY.
	£	£ s. d.	£ s. d.
91,800	1,000	66 0 5	1,483 15 2
92,442	2,500	166 2 1	3,731 8 5
93,333	500	36 16 7	826 5 2
93,475	500	33 9 7	751 15 7
93,769	1,000	66 19 2	1,503 11 5
93,882	500	33 0 3	741 17 7

NOTE.—The Policy Holder in each case has been insured against death during the fifteen years, and being alive at the maturity of the Policy, **received an amount equivalent to the refund of all the premiums paid, with nearly five per cent. compound interest; thus his insurance during the fifteen years cost him nothing.**

PRINTERS: C. & E. LAYTON, LONDON.

[P.T.O.

LATEST ADVANCES IN LIFE INSURANCE.

IN addition to the **Annual Bonus** and **Five-Year Dividend** Policies which the Company issue—plans which are admirably adapted to meet many requirements—they have recently introduced two systems of insurance which specially commend themselves to all who desire the largest possible provision against death, as well as the most remunerative return during life. Each system offers life insurance combined with an investment, and, in the case of the first-mentioned system, practical freedom of action with respect to occupation, residence, and travel after two years. The **first of these systems** is called the

Nonforfeiting Tontine Limited-Endowment Plan,

and under Rate C (20-year period) of this plan an Annual Payment of £40. 10*s.* 0*d.* will secure, at age 35, a £1000 Policy, with the guarantee that if death occur within the 20 years, **the £1000, together with the total amount of premiums actually paid,** will be payable to the beneficiary.

Should the Insured survive the 20 years, **a Cash Payment of £500, together with the Tontine Surplus (estimated at £516),** will be payable by the Company on surrender of the Policy; or, if preferable, an Annuity for life or a Paid-up Policy may be arranged for.

The **second of these systems** is called the

Nonforfeiting Tontine Plan, with Limited Premium Return,

and under the 20-year Endowment Table of this plan, an Annual Payment of £58. 9*s.* 10*d.* will secure, at age 35, a £1000 Policy, with the guarantee that if death occur within the 20 years, **the £1000, together with the total amount of premiums actually paid,** will be payable to the beneficiary.

Should the Insured survive the 20 years, **a Cash Payment of £1000, together with the Tontine Surplus (estimated at £719),** will be payable by the Company on surrender of the Policy; or, if preferred, an Annuity for Life or a Paid-up Policy can be arranged for.

Estimates at any age for these Plans, or for 10 and 15-year Tontine Policies, can be obtained on application.

ANNUITIES.

This Company grants ANNUITIES upon more favourable rates than British Companies, the higher rate of interest obtained by their investments in first-class American securities enabling them to do so.

RATE FOR £100 ANNUITY.

	AGES.								
	50			60			70		
	£	*s.*	*d.*	£	*s.*	*d.*	£	*s.*	*d.*
MALES ...	1,254	18	0	975	0	0	709	18	0
FEMALES ...	1,309	0	0	1,041	4	0	763	4	0

CHIEF OFFICE FOR GREAT BRITAIN AND IRELAND:—

76 & 77, CHEAPSIDE, LONDON, E.C.

J. FISHER SMITH, *General Manager;*

From whom Prospectus, containing full information, can be obtained.

UNEQUALLED FOR INFANTS, CHILDREN AND INVALIDS.

SCOTT'S MIDLOTHIAN OAT-FLOUR

8 First-Class Exhibition Awards.
Highly Recommended by the Medical Profession.
"A perfect article of diet, rich in bone and flesh forming properties."
SOLD BY ALL CHEMISTS AND GROCERS.
Sole Makers,
A. & R. SCOTT, Glasgow, Manchester, London.

SOFT WHITE SKIN
BEETHAMS
GLYCERINE & CUCUMBER

Soon renders THE SKIN SOFT, SMOOTH, & WHITE.
Entirely removes and prevents all ROUGHNESS, REDNESS, SUNBURN, TAN, &c.,
And preserves the Skin from the effects of exposure to the SUN, WIND, OR HARD WATER
More effectually than any other known preparation.
No Lady who values her COMPLEXION should ever be without it, as it is
INVALUABLE AT ALL SEASONS OF THE YEAR FOR KEEPING THE SKIN SOFT AND BLOOMING.
It is perfectly harmless, and may be applied to the Skin of the Tenderest Infant.
Bottles, 1s., 1s. 9d., 2s. 6d. Of all Chemists and Perfumers.
Any Size free for 3d. extra by the Sole Makers,
M. BEETHAM & SON, Chemists, Cheltenham.

CAUTION.—Beware of Counterfeits adopting the Title.

WHITE SOUND TEETH, FRAGRANT BREATH, HEALTHY GUMS to OLD AGE.

JEWSBURY & BROWN'S

Oriental Tooth Paste

CAUTION.—The ONLY GENUINE is signed by JEWSBURY & BROWN.

POTS, 1s. 6d. and 2s. 6d. All Chemists.
OVER SIXTY YEARS IN USE. CLIMATE PROOF.

IMPORTANT TO ALL LEAVING HOME FOR A CHANGE.

"Among the most useful medicines that have been introduced within the last century is **ENO'S 'FRUIT SALT.'** There is no doubt that where it has been taken in the earliest stage of a disease, it has, in many instances, prevented what would otherwise have been a severe illness. The effect of **ENO'S 'FRUIT SALT'** upon a disordered and feverish condition of the system is marvellous. As a nursery medicine the **'FRUIT SALT'** is invaluable; instead of children disliking it, they look upon it rather in the light of a luxury. As a gentle aperient and a corrective in cases of any sort of over-indulgence in eating or drinking, **ENO'S 'FRUIT SALT'** is all that is needful to restore freshness and vigour. In cases of Nervous Headache and Debility it is especially useful, and should be taken in all cases where persons suffer from a sluggish condition of the Liver."—*Young Ladies' Journal.*

"MANY SICK PEOPLE LOOKED UPON ME AS A PHYSICIAN.—For a long time we had been in the centre of Africa without any medical man. Natives came with all manner of diseases. One day we had a man that was said to be mad. In some of his fits he had wounded a neighbour with an arrow. Whether he was mad or not, he was evidently far from well, and I gave him a large dose of ENO'S 'FRUIT SALT.' The poor fellow came back next morning to tell us that he was better. His breath was no longer offensive, and he looked cheerful. We were sorry when our supply of FRUIT SALT was done; it was a favourite both with natives and Europeans, and is much used along the malarious coasts."—*Africana*, by the Rev. DUFF MACDONALD, M.A., B.D., Vol. II., p. 207.

FROM ENGLAND to SYDNEY on BOARD the "SAMUEL PLIMSOLL."—"Dear Sir.—I have just received a letter from my daughter, who sailed for Sydney last April as assistant-matron of the *Samuel Plimsoll*, in which she says: 'I am sorry, indeed, dad, to hear how the winter has tried you. Make up your mind to come out here. You will never regret it; and don't forget to bring some ENO'S "FRUIT SALT." It was the only cure on board for sea-sickness. I gave it nearly all away to those who were ill, which seemed to revive them, and they soon began to rally under its soothing influence.'—I am, dear Sir, yours faithfully, TRUTH. 6 Asylum Road, Old Kent Road, S.E. Mr J. C. ENO."

CAUTION.—Examine each Bottle, and see that the Capsule is marked ENO'S "FRUIT SALT." *Without it, you have been imposed on by a worthless imitation. Sold by all Chemists.*

PREPARED only at ENO'S "FRUIT SALT" WORKS, Pomeroy Street, New Cross Road, London, S.E.